CLAIMS:

1. Method of manufacturing a semiconductor device (10) with a field effect transistor, in which method a semiconductor body (1) of a semiconductor material is provided, at a surface thereof, with a source region (2) and a drain region (3) and with a gate region (4) between the source region (2) and the drain region (3), which gate region comprises a semiconductor region (4A) of a further semiconductor material that is separated from the surface of the semiconductor body (1) by a gate dielectric (5), and with spacers (6) adjacent to the gate region (4) for forming the source and drain regions (2,3), in which method the source region (2) and the drain region (3) are provided with a metal layer (7) which is used to form a compound (8) of the metal and the semiconductor material, and the gate region (4) is provided with a metal layer (7) which is used to form a compound (8) of the metal and the further semiconductor material, characterized in that before the spacers (6) are formed, a sacrificial region (4B) of a material that may be selectively etched with respect to the semiconductor region (4A) is deposited on top of the semiconductor region (4A), and after the spacers (6) have been formed, the sacrificial layer (4B) is removed by etching, and after removal of the sacrificial layer (4B), a single metal layer (7) is deposited contacting the source, drain and gate regions (2,3,4).

2 A method as claimed in claim 1, characterized in that the spacers (6) are formed by depositing a layer of a dielectric material on top of the semiconductor body (1) on which the gate region (4) comprising the semiconductor region (4A) and the sacrificial region (4B) is present and by subsequently removing the deposited layer on top of and on both sides of the gate region (4) by etching.

3. A method as claimed in claim 1 or 2, characterized in that the semiconductor region (4A) is completely consumed during the formation of the compound (8) of the metal and the further semiconductor material.

4. A method as claimed in claim 1, 2 or 3, characterized in that the formation of the compounds (8) between the metal and the semiconductor material and the metal and the

further semiconductor material is carried out in two separate heating steps, the first heating step resulting in an intermediate compound with a low content of the semiconductor material or of the further semiconductor material and in the second heating step the intermediate compound being converted to the compound having a higher content of the semiconductor material or of the further semiconductor material.

5. A method as claimed in claim 4, characterized in that between the two heating steps, a part of the metal layer (7) which has not reacted to form the intermediate compound is removed by etching.

6. A method as claimed in claim 4 or 5, characterized in that between the two heating steps, a layer (44) of the further semiconductor material is deposited on the surface of the semiconductor body (1).

7. A method as claimed in claim 6, characterized in that after the second heating step, a part of the layer (44) of the further semiconductor material which has not reacted to form the compound is removed by etching.

8. A method as claimed in anyone of the preceding claims, characterized in that after the formation of the compounds of the metal and the semiconductor material and of the metal and the further semiconductor material, the spacers (6) are removed.

9. A method as claimed in anyone of the preceding claims, characterized in that for the semiconductor material as well as for the further semiconductor material silicon is chosen, and for the intermediate compound and for the compound of the metal and the semiconductor material and the further semiconductor material a metal silicide is chosen.

10. A semiconductor device (10) comprising a field effect transistor obtained by a method as claimed in anyone of the preceding claims.